

=> d query 17

L1 1 SEA FILE=REGISTRY "CALCIUM CARBONATE"/CN OR "CALCIUM CARBONATE (CACO3)"/CN
 L2 1 SEA FILE=REGISTRY "CALCIUM HYDROXIDE"/CN OR "CALCIUM HYDROXIDE (CA(OH)2)"/CN
 L3 1 SEA FILE=REGISTRY "CARBON DIOXIDE"/CN
 L5 4437 SEA FILE=HCA (L1 OR (CALCIUM OR CA OR MONOCALCIUM) (W) (CARBONATE OR CO3 OR MONOCARBONATE) OR CACO3 OR CALCITE OR CARBONIC (W) ACI D(W) CALCIUM (W) SALT) (5A) (PRECIPITAT? OR PPT OR PPT#)
 L6 323 SEA FILE=HCA L2 (5A) (SUSPEN? OR DISPERS? OR COLLOID? OR EMULS? OR MICROEMULS? OR SLURR?)
 L7 4 SEA FILE=HCA L5 AND L6 AND L3

=> d cbib abs hitrn 17 1-4

L7 ANSWER 1 OF 4 HCA COPYRIGHT 1999 ACS
 120:61087 Fiber- and filler-based composite materials, and their manufacture and uses. Cousin, Laurent; Mora, Fernand (Aussedat-Rey, Fr.). Ger. Offen. DE 4311505 A1 19931014, 18 pp. (German). CODEN: GWXXBX. APPLICATION: DE 93-4311505 19930407. PRIORITY: FR 92-4474 19920407.
 AB The composite materials consist of high-surface area, fibrillated fibers and **pptd. CaCO3** that is mech. bonded to the fibers. The composites are manufd. by dilg. a dispersion of microfibrillated fibers in an aq. Ca(OH)2 suspension to solid concn. .ltoreq.5, preferably .ltoreq.4, and most preferably 2.5 wt.%, introducing CO2 under agitation into the dispersion, and aging the suspension at 10-50.degree. to **ppt. cryst. CaCO3** on the fibers. The composites are fire-resistant, and used as building materials, highly filled writing and printing paper, and nontransparent nonwoven substrates. The fibers are selected from cellulose and synthetic fibers.
 IT **124-38-9**, Carbon dioxide, reactions
 RL: RCT (Reactant)
 (reaction of, with calcium hydroxide in fiber-contg. suspensions, for fiber-filled calcium carbonate composites for building materials and highly filled writing and printing paper and nontransparent nonwoven substrates)
 IT **1305-62-0**, Calcium hydroxide, uses
 RL: USES (Uses)
 (**suspensions** contg. fibers and, carbonation of, for fiber-filled calcium carbonate composites for building materials and highly filled writing and printing paper and nontransparent nonwoven substrates)
 L7 ANSWER 2 OF 4 HCA COPYRIGHT 1999 ACS
 109:40217 Studies on process variables in **precipitated** and activated **calcium carbonate** industries. Bose, T. K.; Mukherjea, R. N. (Dep. Chem. Eng., Jadavpur Univ., Calcutta, India). J. Inst. Eng. (India), Part CH, 67(2-3), 47-52 (English) 1987. CODEN: JECEAF. ISSN: 0020-3351.
 AB The manuf. of **pptd.** and activated **CaCO3** involves the crushing of the limestone raw material, cleaning of the size fraction

desired (76-127 mm), calcination in a shaft kiln with either coke or producer gas as the fuel, slaking of the burnt lime, grit removal from the lime slurry, carbonation by the kiln gas, coating of the **pptd.** **CaCO₃** with Na stearate, and drying. The effects of the ash content of the coke, the calcination temp., the use of steam in the hydrator, the carbonation time, the CO₂ concn., the kiln conditions, the hydrator conditions, and the carbonator conditions are discussed.

IT **124-38-9**, Carbon dioxide, reactions
 RL: RCT (Reactant)
 (carbonation by, of calcium hydroxide slurry)

IT **1305-62-0**, Calcium hydroxide, reactions
 RL: RCT (Reactant)
 (carbonation of **slurry** of)

IT **471-34-1P**, preparation
 RL: PREP (Preparation)
 (manuf. of coated **pptd.**)

L7 ANSWER 3 OF 4 HCA COPYRIGHT 1999 ACS
 95:177280 Study on carbon-14 in nuclear plants. Casa, Anna Francesca (Italy).
 Not. - Com. Naz. Energ. Nucl. (Italy), 27(5), 60-3 (Italian) 1981.

CODEN:

CNNNAF. ISSN: 0535-9457.

AB In addn. to the ¹⁴C present from natural causes such as cosmic rays, it may be produced by the following reactions: ¹⁷O(n, .alpha.)¹⁴C, ¹⁴N(n,p)¹⁴C and ¹³C(n, .gamma.)¹⁴C. The ¹⁴C thus produced occurs either as CO₂ or as hydrocarbons. The CO₂ can be removed by passing the gases through a **suspension** of Ca(OH)₂ [**1305-62-0**] in NaOH, forming a **ppt.** of **CaCO₃** [**471-34-1**]; steps are taken to prevent this solid from blocking the gas flow. Hydrocarbons are converted to CO₂ by oxidizing catalysts. The contaminated CaCO₃ is disposed of in cement. This method gives effluent gases with a CO₂ concn. of <10 ppm.

IT **124-38-9**, properties
 RL: PRP (Properties)
 (**pptn.** of, as **calcium carbonate** in carbon-14 control in nuclear power plants)

IT **471-34-1**, properties
 RL: PRP (Properties)
 (**pptn.** of, in control of carbon-14 in nuclear power plant)

L7 ANSWER 4 OF 4 HCA COPYRIGHT 1999 ACS

94:177433 Preparation of **calcium carbonate** by **precipitation** of an aqueous calcium hydroxide suspension using carbon dioxide gas. Soehnel, Otakar; Markalous, Frantisek (Vyzk. Ustav Anorg. Chem., Chemopetrol, K. U. O., Usti nad Labem, Czech.). Chem. Prum., 31(2), 53-6 (Czech) 1981. CODEN: CHPUA4. ISSN: 0009-2789.

AB CaCO₃ manuf. for possible use as an inexpensive filler for plastics, rubber, paper, colors, etc., was studied. For individual applications, CaCO₃ with different properties is required, which can usually be obtained by pptn. The reaction-condition effects during the carbonation of Ca(OH)₂

suspensions by CO₂ on the product properties was investigated. The particle-size distribution can be changed by changing the temp., suspension concn., CO₂ feed rate, or Na citrate addn. The av. size can be

judged by the filtration resistance, because it is in inverse proportion to the av. CaCO₃ size.

- IT 124-38-9, reactions
 RL: RCT (Reactant)
 (carbonation by, of calcium hydroxide suspension, calcium carbonate particle size in relation to conditions of)
- IT 1305-62-0, reactions
 RL: RCT (Reactant)
 (carbonation of **suspension** of, calcium carbonate particle size in relation to conditions of)

=> d query l12

- L1 1 SEA FILE=REGISTRY "CALCIUM CARBONATE"/CN OR "CALCIUM CARBONATE (CACO₃)/CN
- L2 1 SEA FILE=REGISTRY "CALCIUM HYDROXIDE"/CN OR "CALCIUM HYDROXIDE (CA(OH)₂)/CN
- L3 1 SEA FILE=REGISTRY "CARBON DIOXIDE"/CN
- L5 4437 SEA FILE=HCA (L1 OR (CALCIUM OR CA OR MONOCALCIUM) (W) (CARBONATE OR CO₃ OR MONOCARBONATE) OR CACO₃ OR CALCITE OR CARBONIC (W) ACI D(W) CALCIUM (W) SALT) (5A) (PRECIPITAT? OR PPT OR PPT#)
- L10 61 SEA FILE=HCA L5 AND L2 AND L3 AND (AQ# OR AQUEOUS? OR WATER OR H₂O OR LIQ OR LIQUID? OR SOLUTION OR SOLN?)
- L11 1879 SEA FILE=HCA L2(10A) (AQ# OR AQUEOUS? OR WATER OR H₂O OR LIQ OR LIQUID? OR SOLUTION OR SOLN?)
- L12 8 SEA FILE=HCA L10 AND L11

=> s l12 not l7

- L13 8 L12 NOT L7

=> d cbib abs hitrn l13 1-8

L13 ANSWER 1 OF 8 HCA COPYRIGHT 1999 ACS

128:298686 Absorption of carbon dioxide by lime **water** spray. Taniguchi, Izumi; Yokoyama, Hiroki; Asano, Koichi (Dep. Chem. Eng., Fac. Eng., Tokyo Inst. Technol., Tokyo, 152-8552, Japan). Sekiyu Gakkaishi, 41(3), 227-231 (Japanese) 1998. CODEN: SKGSAE. ISSN: 0582-4664. Publisher: Sekiyu Gakkai.

AB Exptl. studies of gas absorption were carried out for carbon dioxide-air-**aq.** Ca(OH)₂ **soln.** system using a small spray column over a wide range of mass flow rates of **liq.** L = 3-8 .times. 10-3 kg/s, mass flow rates of carbon dioxide-air mixts. G = 0.5-2.0 .times. 10-3 kg/s, and feed gas concns. y = 0.1-1.0. Obsd. data for the dimensionless rate of absorption of carbon dioxide showed good agreement with the one predicted by a solid sphere penetration model with second order irreversible chem. reaction for feed gas concn. y .ltoreq. 0.2.

The systematic deviation from the predicted one became considerable with increasing feed gas concn. and Fourier no. This may be due to the formation of **calcium carbonate ppt.** near the

- gas-liq. interface of the spray drops.
- IT **1305-62-0**, Calcium hydroxide, reactions
 RL: RCT (Reactant)
 (absorption of carbon dioxide by lime **water** spray)
- IT **124-38-9**, Carbon dioxide, processes
 RL: REM (Removal or disposal); PROC (Process)
 (absorption of carbon dioxide by lime **water** spray)
- L13 ANSWER 2 OF 8 HCA COPYRIGHT 1999 ACS
- 122:318061 Manufacture of lightweight calcium carbonate and calcium chloride from industrial flue gas. Li, Weijia (Peop. Rep. China). Faming Zhuanli Shenqing Gongkai Shuomingshu CN 1085188 A 19940413, 7 pp. (Chinese). CODEN: CNXXEV. APPLICATION: CN 92-109937 19920929.
- AB The process comprises collecting flue gases, removing dusts, and feeding dust-removed flue gas into a lime **water**-filled reactor where CO₂ gases react with Ca(OH)₂ to produce lightwt. **CaCO₃ ppt**. The obtained CaCO₃ can be used to manuf. CaCl₂ by the reaction with hydrochloric acid.
- IT **124-38-9**, Carbon dioxide, reactions **1305-62-0**, Lime **water**, reactions
 RL: RCT (Reactant)
 (manuf. of lightweight calcium carbonate and calcium chloride from industrial flue gas)
- L13 ANSWER 3 OF 8 HCA COPYRIGHT 1999 ACS
- 121:137145 Manufacture of pure amorphous silica from rocks containing noncrystalline silica. Iosef, Alexander (Rotem Fertilizers Ltd., Israel).
 Eur. Pat. Appl. EP 610136 A1 19940810, 9 pp. DESIGNATED STATES: R: DE,
 ES, FR, GB, IT, NL. (English). CODEN: EPXXDW. APPLICATION: EP 94-400218
 19940202. PRIORITY: IL 93-104584 19930202; IL 93-104722 19930214.
- AB The process comprises dissolving the rock in an alk. **soln.** contg. NaOH and Na₂CO₃ in SiO₂/Na₂O wt. ratio 0.5-3.0 to obtain a sodium silicate **soln.**, pptg. pure amorphous SiO₂ and coproducing Na₂CO₃ by addn. of H₂CO₃, and converting the Na₂CO₃ **soln.** into cryst. H₂CO₃ for recycling by a salting-out reaction with NaCl. The alk. **soln.** is obtained by causticizing Na₂CO₃ with Ca(OH)₂. The preferred NaOH concn. in the dissoln. step is 4-14 wt.%.
 IT **124-38-9**, Carbon dioxide, reactions
 RL: RCT (Reactant)
 (carbonization with, of sodium carbonate, for bicarbonate for pure amorphous silica pptn. from alk. **solns.** of noncryst. silica-contg. rocks)
- IT **1305-62-0**, Calcium hydroxide, reactions
 RL: RCT (Reactant)
 (causticization with, of sodium carbonate, for alk. **solns.** in for pure amorphous silica pptn. from noncryst. silica-contg. rocks)
- IT **471-34-1**, Calcium carbonate, uses
 RL: USES (Uses)
 (**pptn.** in presence of, in pure amorphous silica manuf. from noncryst. silica-contg. rocks)
- L13 ANSWER 4 OF 8 HCA COPYRIGHT 1999 ACS
- 116:258553 Manufacture of spherical calcium carbonate powder. Ota, Yoshio; Inui, Saburo; Iwashita, Tetsushi (Yabashi Kogyo K. K., Japan). Jpn. Kokai

- Tokkyo Koho JP 04046013 A2 19920217 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 90-152071 19900611.
- AB The process involves bubbling **aq.** $\text{Ca}(\text{OH})_2$ **soln.** with 17-500 mL/min [to 1 L of **aq.** $\text{Ca}(\text{OH})_2$ with Ca^{2+} concn. 800 ppm] CO_2 at 15-30.degree. to **ppt.** CaCO_3 . The powder with homogeneous size is obtained by the simple **liq.-gas** process.
- IT **124-38-9**, Carbon dioxide, reactions
 RL: RCT (Reactant)
 (reaction of, with calcium hydroxide, in **aq. soln.**, for manuf. of spherical calcium carbonate powder)
- IT **1305-62-0**, Calcium hydroxide, reactions
 RL: RCT (Reactant)
 (reaction of, with carbon dioxide, in **aq. soln.**, for manuf. of spherical calcium carbonate powder)
- L13 ANSWER 5 OF 8 HCA COPYRIGHT 1999 ACS
- 104:151856 Removal of carbon dioxide gas from **aqueous ammonia**. Osono, Toshio; Osono, Toshio; Tomidokoro, Susumu (Lion Akzo K. K., Japan). Jpn. Kokai Tokkyo Koho JP 61014121 A2 19860122 Showa, 3 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 84-134300 19840629.
- AB $\text{CO}_2(\text{g})$ contained in **aq.** NH_3 is removed as CaCO_3 by adding $\text{Ca}(\text{OH})_2$ and heating with a nucleation promoter to **ppt.** CaCO_3 ; addnl. $\text{Ca}(\text{OH})_2$ is then added. The method is very effective in removing CO_2 from **aq.** NH_3 . Thus, $\text{Ca}(\text{OH})_2$ and 15% milky **aq.** NH_3 contg. 500 ppm $\text{CO}_2(\text{g})$ and 0.7% soap were stirred 30 min at room temp., heated to 40.degree., and then $\text{Ca}(\text{OH})_2$ and diatomaceous earth were added. After 3 h, the suspension was filtered to give an NH_3 **soln.** contg. 25 ppm CO_2 , compared with 100 ppm for a filtrate obtained without the addn. of diatomaceous earth.
- IT **1305-62-0**, uses and miscellaneous
 RL: USES (Uses)
 (in removal of carbon dioxide, from **aq.** ammonia)
- IT **124-38-9**, uses and miscellaneous
 RL: REM (Removal or disposal); PROC (Process)
 (removal of, from **aq.** ammonia, by reaction with calcium hydroxide)
- L13 ANSWER 6 OF 8 HCA COPYRIGHT 1999 ACS
- 104:91440 Possible use of **precipitated calcium carbonate** isolated in decarbonation **water** treatment with calcium hydroxide. Slovenc, M. M.; Slovenc, M. F. (Fac. Sci., Univ. Zagreb, Zagreb, 41000, Yugoslavia). Kem. Ind., 34(11), 699-702 (Serbo-Croatian) 1985. CODEN: KJUIAR. ISSN: 0022-9830.
- AB Tests have shown that the **pptd.** CaCO_3 , obtained by steam boiler **water** decarbonation with $\text{Ca}(\text{OH})_2$, can be used as an abrasive and as a filler in cosmetic preps. as well as in many other industrial outlets. Samples of the **pptd.** CaCO_3 after hot and cold decarbonation treatment were analyzed for the presence of impurities, particle size, and crystal shape and structure, as well as the calcite/aragonite ratio and the results are presented.
- IT **1305-62-0**, uses and miscellaneous
 RL: USES (Uses)
 (removal by, of carbon dioxide from boiler **water** with calcium hydroxide, uses of calcium carbonate from)
- IT **124-38-9**, uses and miscellaneous
 RL: REM (Removal or disposal); PROC (Process)
 (removal of, from boiler **water** with calcium hydroxide, uses

of calcium carbonate from)

L13 ANSWER 7 OF 8 HCA COPYRIGHT 1999 ACS

102:81043 Crystallization of calcium carbonate in the process of carbonation of **aqueous** solutions of calcium hydroxide and sucrose. Koneczny, H.; Mielczarek, M. (Inst. Chem., Nicolaus Copernicus Univ., Torun, Pol.). Process Technol. Proc., 2(Ind. Cryst.), 429-30 (English) 1984. CODEN: PTPREM.

AB The **pptn.** was studied of **CaCO3** as **calcite** from **solns.** contg. Ca(OH)2 1.65 and 10.74 and sucrose 7.88 and 30.62 wt.%, resp. The mechanisms of nucleation and crystal growth are discussed.

IT 1305-62-0, reactions

RL: RCT (Reactant)

(carbonation of **aq.** sucrose and, calcium carbonate crystn. in)

IT 124-38-9, reactions

RL: RCT (Reactant)

(reaction of, with **aq.** calcium hydroxide-sucrose **soln** ., calcium carbonate crystn. in)

L13 ANSWER 8 OF 8 HCA COPYRIGHT 1999 ACS

84:79390 Treatment of calcium hydroxide-containing waste **water** by aeration. Akama, Akira; Yamazaki, Kunio; Takano, Kohei (Japan). Japan. Kokai JP 50133656 19751023 Showa, 3 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 74-41201 19740410.

AB Ca(OH)2 [1305-62-0]-contg. waste **water** from concrete mixing or concrete product-washing processes is aerated to **ppt.** the Ca(OH)2 as **CaCO3** by reacting with CO2 [124-38-9] in air. The resulting **water** can be used as industrial **water**. Thus, a **water** contg. 300 ppm Ca2+ at pH 13.0 was treated by blowing 2 ml air/min-l. **water** for 9 hr to decrease the Ca2+ content to 20 ppm. The pH of the resulting **water** was 7.8.

IT 124-38-9, reactions

RL: RCT (Reactant)

(neutralization and **pptn.** by, in calcium hydroxide removal from waste **water**)

IT 1305-62-0

RL: REM (Removal or disposal); PROC (Process)

(removal of, from waste **water** by aeration)

=> d query l16

L1 1 SEA FILE=REGISTRY "CALCIUM CARBONATE"/CN OR "CALCIUM CARBONATE (CACO3)"/CN

L2 1 SEA FILE=REGISTRY "CALCIUM HYDROXIDE"/CN OR "CALCIUM HYDROXIDE (CA(OH)2)"/CN

L3 1 SEA FILE=REGISTRY "CARBON DIOXIDE"/CN

L4 2183 SEA FILE=HCA L1/P

L8 884 SEA FILE=HCA L2 (5A) (AQ# OR AQUEOUS? OR WATER OR H2O OR LIQ OR LIQUID? OR SOLUTION OR SOLN?)

L16 7 SEA FILE=HCA L4 AND L8 AND L3

=> s l16 not (l7 or l13)

L17 5 L16 NOT (L7 OR L13)

=> d cbib abs hitrn l17 1-5

L17 ANSWER 1 OF 5 HCA COPYRIGHT 1999 ACS

117:29879 Manufacture of colored calcium carbonate. Ebinuma, Osamu; Sakaguchi, Koji; Yokoi, Akira; Saito, Yoshiki (Oji Seishi K. K., Japan). Jpn. Kokai Tokkyo Koho JP 04077312 A2 19920311 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 90-187975 19900718.

AB The process comprises adding a dye to an aq. Ca(OH)_2 slurry and purging the slurry with CO_2 while maintaining the pH of the slurry at >9.5 with Ca(OH)_2 to form colored CaCO_3 . The process is used in papermaking to manuf. paper with permanent color.

IT 1305-62-0P, Calcium hydroxide, reactions

RL: PREP (Preparation); RCT (Reactant)
(aq., reaction of colored, with carbon dioxide, in colored calcium carbonate manuf., pH control in)

IT 471-34-1P, Calcium carbonate, preparation

RL: PREP (Preparation)
(manuf. of colored, by reaction of carbon dioxide with colored calcium hydroxide slurry, pH control in)

IT 124-38-9, Carbon dioxide, reactions

RL: RCT (Reactant)
(reaction of, with pigment-contg. aq. calcium hydroxide slurries, pH control in, in colored calcium carbonate manuf.)

L17 ANSWER 2 OF 5 HCA COPYRIGHT 1999 ACS

115:259344 Manufacture of calcium carbonate for pigment of paper making. Kumasaka, Tetsuo; Suzuki, Akira; Yamashita, Kazuo; Shimono, Kazuhisa; Horiuchi, Hideki (Okutama Kogyo Co., Ltd., Japan). Jpn. Kokai Tokkyo

Koho JP 03197318 A2 19910828 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 89-334980 19891226.

AB The CaCO_3 (av. diam. $1.0\text{--}10\text{ }\mu\text{m}$), formed from CaCO_3 particles having major diam. $0.6\text{--}0.8\text{ }\mu\text{m}$, minor diam. $0.21\text{--}0.30\text{ }\mu\text{m}$ and aspect-ratio <3 , is manufd. by adding aq. suspension of Ca(OH)_2 having concn. 40 wt.% and viscosity coeff. 2000 cP (lime milk) to a gas-dispersion agitating-type reactor, adjusting its concn. to 7-15 wt.%, blowing CO_2 -contg. gas into the reactor until carbonatation rate 70-95% to form a primary reacting liq., transferring the primary reacting liq. to a gas-blowing agitating type reactor, blowing CO_2 -contg. gas for maintaining the primary reacting liq. at pH ≥ 12 , continuously adding the lime milk until mol. ratio of total Ca amt. in the primary reacting liq. vs amt. in the lime milk equals (10:1)-(1:20), and further blowing the CO_2 -contg. gas until pH decreases to approx. 7 for completion of the carbonatation.

IT 1305-62-0P, Calcium hydroxide, preparation

RL: PREP (Preparation)
(aq. suspension of, flocculated calcium carbonate manuf. from, for pigment of paper making)

IT 124-38-9, Carbon dioxide, uses and miscellaneous

RL: USES (Uses)
(blowing of, for carbonatation of lime milk, in manuf. of flocculated calcium carbonate, for pigment of paper making)

IT 471-34-1P, Calcium carbonate, preparation

RL: PREP (Preparation)
(flocculated, manuf. of, from lime milk, for pigment of paper making)

L17 ANSWER 3 OF 5 HCA COPYRIGHT 1999 ACS

114:26705 Manufacture of uniform cubic calcium carbonate. Tanaka, Koichi; Kumasaka, Tetsuo; Yamashita, Kazuo (Okutama Kogyo Co., Ltd., Japan).

Jpn.

Kokai Tokkyo Koho JP 02184518 A2 19900719 Heisei, 6 pp. (Japanese).

CODEN: JKXXAF. APPLICATION: JP 89-5387 19890112.

AB Hexagonal $\text{CaCO}_3 \cdot x\text{Ca}(\text{OH})_2 \cdot y\text{H}_2\text{O}$ ($x = 0.7-2.3$, $y = 0.3-6.0$) is mixed with an aq. $\text{Ca}(\text{OH})_2$ suspension (viscosity $\geq 2,000$ cP at 25.degree. and 400 g/L) at a mol ratio of 1:(0.25-4), carbonated at 10-40.degree. to 20-60% by blowing with gases contg. 15-100 vol.% CO_2 at 1.0-20 m³/m²-h to obtain an aq. suspension (A), mixed with aq. suspension (B) obtained by carbonation of aq. $\text{Ca}(\text{OH})_2$ suspension 30-100 g/L, $\geq 2,000$ cP at 25.degree. and 400 g/L at 10-20.degree. to 20-60%, and carbonated at 10-20.degree. to give uniform cubic CaCO_3 .

IT 1305-62-0, Calcium hydroxide, reactions

RL: RCT (Reactant)

(aq. suspension, in cubic calcium carbonate manuf., by carbonation)

IT 124-38-9, Carbon dioxide, uses and miscellaneous

RL: USES (Uses)

(in cubic calcium carbonate manuf., from basic calcium carbonate hydrate)

IT 471-34-1P, Calcium carbonate, preparation

RL: PREP (Preparation)

(manuf. of cubic, from hexagonal basic calcium carbonate hydrate, by carbonation)

L17 ANSWER 4 OF 5 HCA COPYRIGHT 1999 ACS

113:43315 Reactive crystallization of calcium carbonate by gas-liquid and liquid-liquid reactions. Kotaki, Yasushi; Tsuge, Hideki (Dep. Appl. Chem., Keio Univ., Yokohama, 223, Japan). Can. J. Chem. Eng., 68(3), 435-42 (English) 1990. CODEN: CJCEA7. ISSN: 0008-4034.

AB Crystn. of CaCO_3 by gas-liq. and liq.-liq. reactions in a continuous mixed-suspension mixed-product removal crystallizer was conducted over a wide range of suspension densities. The effects of operating factors and reaction mechanism on the crystn. kinetics were investigated. The crystn.

kinetics for both reaction systems are correlated by the power law model, and these correlations depend on the suspension d. regions. The kinetic orders in the power law model are correlated with carbonate alky. irresp. of the reaction mechanism and the suspension d.

IT 1305-62-0, Calcium hydroxide, reactions

RL: RCT (Reactant)

(carbonation of aq., for reactive crystn. of calcium carbonate)

IT 471-34-1P, Calcium carbonate, preparation

RL: FORM (Formation, nonpreparative); PREP (Preparation)

(formation of, by reactive crystn., in gas-liq. and liq.-liq. reactions)

IT 124-38-9, Carbon dioxide, reactions

RL: RCT (Reactant)

(reaction of, with calcium hydroxide soln., for reactive crystn. of calcium carbonate)

L17 ANSWER 5 OF 5 HCA COPYRIGHT 1999 ACS

85:67757 Preparing sewage sludge for dewatering. Cardinal, Paul J., Jr. (Envirotech Corp., USA). U.S. US 3947350 19760330, 7 pp. (English).

CODEN: USXXAM. APPLICATION: US 70-4624 19700121.

AB Sludge resulting when sewage is dosed with Ca(OH)_2 to remove phosphates is treated with any available CO_2 source to convert Ca(OH)_2 and other salts to the more readily dewatered carbonate form, and to convert Mg(OH)_2 salts to the bicarbonate form to facilitate removal of Mg from the system.

IT 471-34-1P, preparation
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in waste water treatment sludge by carbon dioxide, dewatering in relation to)

IT 124-38-9, uses and miscellaneous
 RL: USES (Uses)
 (in dewatering waste water treatment sludge)

IT 1305-62-0
 RL: PROC (Process)
 (in waste ~~water~~ treatment sludge, conversion to carbonate form, carbon dioxide in, dewatering in relation to)

=> d query

L1 1 SEA FILE=REGISTRY "CALCIUM CARBONATE"/CN OR "CALCIUM CARBONATE (CACO3)"/CN

L4 2183 SEA FILE=HCA L1/P

L18 20600 SEA FILE=HCA (MIX? OR BLEND? OR ADMIX? OR COMMIX? OR IMMIX? OR INTERMIX? OR DOPE# OR DOPING) (3A) (SERIES OR MULTI OR MANY OR SEVERAL OR PLURALITY OR MULTITUD? OR PLURIF? OR GROUP? OR SET)

L19 3196 SEA FILE=HCA (MIX? OR BLEND? OR ADMIX? OR COMMIX? OR IMMIX? OR INTERMIX? OR DOPE# OR DOPING) (3A) (NETWORK? OR SUCCESSION OR SEQUEN? OR CONSECUTIV?)

L20 4 SEA FILE=HCA L4 AND (L18 OR L19)

=> s 120 not (17 or 113 or 117)

L21 4 L20 NOT (L7 OR L13 OR L17)

=> d cbib abs hitrn 121 1-4

L21 ANSWER 1 OF 4 HCA COPYRIGHT 1999 ACS

113:96588 Loss of mineral and trace elements from the soil. Shil'nikov, I. A.; Mel'nikova, M. N.; Pimenov, E. A. (Vses. Nauchno-Issled. Inst. Udobr. Agropochvoved., USSR). Khim. Sel'sk. Khoz. (6), 12-15 (Russian) 1990. CODEN: KSKHE7. ISSN: 0235-2516.

AB Liming lysimeters planted to a barley-oat-vetch green forage mixt .-barley ~~sequence~~ and fertilized with $(\text{NH}_4)_2\text{SO}_4$, double superphosphate and KCl, at hydrolytic acidity increased Ca leaching from sandy-loamy and loamy sod-podzolic soils by 19 and 30%, resp. A double lime rate increased Ca leaching by 26 and 27%, resp. A single N rate increased Ca leaching by 7 and 3%, resp., and a double N rate by 39 and 10%, resp. Complementing liming with 40 tons manure/ha increased Ca, K and N losses, and decreased S losses, from both the soils. Mg losses from the loamy soil also increased. Following barley and oat-vetch mixt. harvest by late-summer white mustard or rape forage crops decreased Ca, K,

NO₃-, and N concn. in the lysimetric percolate by 21, 71, 70, and 50%, resp. Replacing KCl by synnyrite or K metasilicate decreased leachate K by 48 and 62%, resp.

IT 471-34-1P

RL: PREP (Preparation)

(soil liming, mineral element leaching from sod-podzol response to)

L21 ANSWER 2 OF 4 HCA COPYRIGHT 1999 ACS

96:21988 Method and apparatus for preparing calcium carbonate. Laine, Jouko; Jussila, Hannu K.; Kilpinen, Olavi (Osakeyhtio Tampella AB, Finland). Finn. FI 60183 B 19810831, 18 pp. (Finnish). CODEN: FIXXAP. APPLICATION: FI 80-1408 19800430.

AB A chalk suspension suitable for prepn. of chalk is obtained by introducing

flue gases in slaked lime. The latter is passed at 30-50.degree. as a continuous stream through at least 2 **consecutive mixing** zones, whereby in each zone a substantially larger (2- to 5-fold) suspension vol. is maintained relative to the subsequent zone. The amt. of flue gas introduced in a zone is 3-5 times as great as that entering the subsequent one. At least part of the gas removed from a given zone

is

led into the preceding one. The app. comprises reactor equipment with facilities for continuous feed of slaked lime and removal of chalk suspension, an inlet for flue gas at the bottom of the app., a dispersing device in the suspension, and a gas outlet at the top.

IT 471-34-1P, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)

(manuf. of, by calcium hydroxide carbonation with flue gas, app. for)

L21 ANSWER 3 OF 4 HCA COPYRIGHT 1999 ACS

94:70560 Treatment of filtrates. (Babcock-Hitachi K. K., Japan). Jpn. Kokai Tokkyo Koho JP 55106505 19800815 Showa, 4 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 79-14347 19790213.

AB CaSO₄-satd. filtrates from the flue gas scrubbing process are treated to recover CaCO₃ (.apprx.10.mu. crystals.) as a scrubbing agent by mixing the filtrate with a Na₂CO₃ followed by settling the **mixt.** in a **series** of tanks for appropriate time to grow the crystals. This treatment requires no flocculant.

IT 471-34-1P, preparation

RL: PREP (Preparation)

(recovery of, in flue gas scrubbing by treatment with sodium carbonate)

L21 ANSWER 4 OF 4 HCA COPYRIGHT 1999 ACS

85:23854 Prevention of the formation of a calcium carbonate deposit in pipelines. Driker, B. N.; Mikhalev, A. S.; Rempel, S. I.; Shchekaleva, R.

N.; Perederii, O. G. (USSR). Tsvetn. Met. (2), 85-7 (Russian) 1976. CODEN: TVMTAX.

AB The effect of addn. of 2.5 mg/l. ethylenediamine tetraphosphonate (EDTF), diethylene triamine pentaphosphonate (DTPF), polyethylene polyamine having

polycomplexon aminomethylphosphonate **groups** (PK), and **mixts.** of polyethylenepolyamine (PEPA) with different inorg. phosphates in different ratios was studied with substrates of steels St3 and K18NZh9T and Ti. The additives had little effect on the CaCO₃ deposition rate from Ca(OH)₂ soln. blown with CO₂. The additives

Nave 09/248,392

decreased significantly the adherence of CaCO_3 crystals to the metal surface, apparently by changing the crystal habit. Addns. of .1toeq.5 mg/l. DPTF, PK, and a 3/7 mixt. of PEPA and Na hexametaphosphate to recycled water did not affect the flotation of Cu-Zn ore.

IT 471-34-1P, preparation

RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in pipelines for recycling of flotation water,
prevention by amines)